UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,843	01/29/2004	James A. Proctor JR.	TAN-2-1408.01.US	2970

24374 7590 04/01/2009

VOLPE AND KOENIG, P.C.
DEPT. ICC
UNITED PLAZA, SUITE 1600
30 SOUTH 17TH STREET
PHILADELPHIA, PA 19103

EXAMINER	
MURPHY, RHONDA L	
ART UNIT	PAPER NUMBER
2416	

MAIL DATE	DELIVERY MODE
04/01/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/767,843	PROCTOR, JAMES A.	
	Examiner	Art Unit	
	RHONDA MURPHY	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 February 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 August 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/23/09 has been entered. Accordingly, claim 21 was previously canceled and claims 1-20 are currently pending in this application.

Response to Arguments

1. Applicant's arguments filed 1/21/09 have been fully considered but they are not persuasive. Applicant argues Martin does not disclose a timing controller coupled to the selector that determines a gross timing offset of the selected reverse link signal to align the selected reverse link signal with reverse link signals from other subscriber units using the common code and a common phase. However, Examiner respectfully disagrees. In columns 3, lines 29-43 and column 3, lines 57 to column 4, lines 1-2, Martin discloses a circuit 22 coupled to the selector circuit 37 that determines a gross timing offset of the selected reverse link signal to align the selected reverse link signal with reverse link signals from other subscriber units using a common phase. The passages recite, in part: "*The value of the signal propagation time is such that the signal components incoming over the signal paths detected at different points in time are*

synchronized. The characteristic signal propagation times τ_μ and direction signature vectors a_μ. are made available for the individual signal paths to be analyzed by the direction signature and propagation time estimator circuit 3. Direction signature and propagation time circuit 3 is responsible for determining the direction signature vector a_μ. and the corresponding characteristic propagation time τ_μ. for each signal path to be detected by a processing path, and for adjusting these parameters according to the changing conditions of the CDMA wireless interface system for the existing link…For this purpose, the I/Q-demodulated reception signals x(i) of all M antenna elements are correlated, after insertion of a time delay in a time element 31 upstream from the correlator, with signals s(i) obtained from the restituted Walsh symbols. Signals s(i), which correspond to the signals transmitted by the mobile station, appear at the output of demodulator 2, and are remodulated in a Walsh modulator 33 before correlation. Time element 31 is designed so that the time delay corresponds to the processing time needed for demodulation, restitution and remodulation of Walsh symbols and thus compensates for the time offset caused by reconstruction of the transmission signals. Although Martin does not explicitly disclose a common code, it is well known in the art that common codes are used within a particular coverage area.

2. Applicant further states there is no disclosure by Martin of the synchronization of the signals to each other. However, Examiner would like to note that Martin's system is an IS-95 system. IS-95 is a synchronized system. Therefore, aligning the time offset of one mobile will automatically time align the other mobiles and allow each mobile (all of the reverse links) to be received by the base station.

3. Thus, it is Examiner's position that the claims as written, have been met by the Martin and Hao reference and the rejection has been maintained.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 2, 5 – 7, 11, 12 and 15 – 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (US 6,324,160) in view of Hao et al. (US 7,272,163).

Regarding claims 1 and 11, Martin teaches an apparatus and method for controlling timing of a reverse link signal from a subscriber unit comprising: a receiver (Fig. 1; antenna 10) that receives a plurality of reverse link signals (col. 2, lines 55-63), wherein each said signal includes a unique orthogonal code (Walsh code, col. 3, lines 2-5); a correlator (32) coupled to the receiver that associates a metric with each of the received reverse link signals (col. 4, lines 19-32; power as a metric); a selector (37) coupled to the correlator that selects the received reverse link signal associated with a best metric (col. 4, lines 42-46; strongest signal components); and a timing controller (circuit 22) coupled to the selector that determines a gross timing offset of the selected reverse link signal to align the selected reverse link signal with reverse link signals from other subscriber units using a common phase (col. 3, lines 29-43, 57-64; col. 4, lines 1-2).

Martin fails to explicitly teach *a common code*, however common codes are well known in the art.

Hao teaches using *a common code* (col. 2, lines 24-25; PN sequence) and unique orthogonal codes.

Therefore, it would have been obvious to one skilled in the art to include a common code for the purpose of associating the signals with a particular code that is common to the coverage area.

Regarding claims 2 and 12, Martin teaches the apparatus and method according to claims 1 and 11 wherein the timing controller determines a fine timing offset and causes a fine phase adjustment of the common code of the selected reverse link signal (col. 3, lines 29-43).

Regarding claims 5 and 15, Martin teaches the apparatus and method according to claims 1 and 11 wherein the selector determines whether a reception quality criterion is met (col. 4, lines 42-46; strongest signal components) and, if met, causes the timing controller to align an unaligned reverse link signal from the given subscriber unit with reverse link signals from other subscriber units (col. 3, lines 29-43).

Regarding claims 6 and 16, Martin teaches the apparatus and method according to claims 5 and 15 wherein the reception quality criterion includes at least one of the following: (a) the metric of an un-aligned reverse link signal exceeds a threshold for a predetermined timespan, (b) the metric of an un-aligned reverse link signal exceeds a threshold relative to the best metric for a predetermined timespan, (c) the best metric drops below an absolute metric, and (d) the metric of an un-aligned reverse link signal

exceeds an absolute metric (col.3, lines 29-53).

Regarding claims 7 and 17, Martin teaches the apparatus and method according to claims 6 and 16 wherein the metrics include at least one of the following: (a) power, (b) SNR, (c) variance of the power, (d) variance of the SNR, (e) relative ratio of the power, SNR, or variance of two paths, (f) bit error rate, and (g) energy per chip divided by the interference density (Ec/Io) (col. 4, lines 26-32; power).

3. Claims 3 , 4, 8 - 10, 13, 14 and 18 - 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin and Hao as applied to claims 1 and 11 above, and further in view of Hadad (US 2007/0076583 A1).

Regarding claims 3, 4, 13 and 14, Martin and Hao teach the apparatus and method according to claims 1 and 11, but fail to explicitly disclose wherein the timing controller provides the gross timing offsets to the subscriber unit in the form of a timing command or report.

However, Hadad teaches wherein the timing controller provides the gross timing offsets to the subscriber unit in the form of a timing command (page 12, paragraph 269).

In view of this, it would have been obvious to one skilled in the art to provide timing offset information to the subscriber in the form of a command or report, for the purpose of correcting its alignment.

Regarding claims 8 and 18, Martin and Hao teach the apparatus and method according to claims 1 and 11 further including a power controller (circuits 35 and 36) that determines a power level of the aligned reverse link signal (col. 4, lines 26-32).

Martin fails to explicitly disclose providing feedback of the power level to the subscriber unit.

However, Hadad teaches disclose providing feedback of the power level to the subscriber unit (page 13, paragraphs 285).

In view of this, it would have been obvious to one skilled in the art to provide feedback of the power level to the subscriber, in order for the subscriber to transmit at a power level that allows for more efficient processing at the base station.

Regarding claims 9, 10, 19 and 20, Martin and Hao teach the apparatus and method according to claims 8 and 18, but fail to explicitly wherein the power controller provides the power level to the subscriber unit in the form of a power command or report.

However, Hadad teaches wherein the power controller provides the power level to the subscriber unit in the form of a power command (page 13, paragraph 285).

In view of this, it would have been obvious to one skilled in the art to provide the power level to the subscriber in the form of a command or report, for the purpose of notifying the subscriber of an appropriate power level to transmit.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RHONDA MURPHY whose telephone number is (571)272-3185. The examiner can normally be reached on Monday - Friday 9:00 - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Rhonda Murphy
Examiner
Art Unit 2416

/R. M./
Examiner, Art Unit 2416

/Kevin C. Harper/
Primary Examiner, Art Unit 2416